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Title: ENDF/B-V Sm-149 Cross Sections for MCNP

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memorandum

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DATE: February 13, 1985

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SYMBOL: X-6:RCL-85-85

SUBJECT: **ENDF/B-V SM-149 CROSS SECTIONS FOR MCNP**

At the request of Lee Carter (HEDL), we have processed the ENDF/B-V evaluation of ^{149}Sm into ACE format for MCNP.

Sm-149 is one of seven isotopic components of natural samarium, with an abundance of 13.9%. The low-energy capture cross section of ^{149}Sm is the dominant neutronic property of natural samarium. The (n,gamma) cross section is shown in Fig. 1. The thermal capture cross section of ^{149}Sm is approximately 41,000 barns.

The ENDF/B-V evaluation of ^{149}Sm (MAT=1319 on Tape 510) was processed into ACE format for MCNP. The ACER module of NJOY was used with a previously-processed PENDF tape as the starting point. The ENDF/B-V data have been processed at 300°K and contain no photon-production information.

To use these data in MCNP, one must fetch a special cross-section directory from CFS: /X6XS/LTSS/XSDIRXAL or /X6XS/CTSS/XSDIRXAL. Then switch XSDIRXAL to XSDIR or set XSDIR=XSDIRXAL on the MCNP execution line. The ZAID is 62149.50C.

:an

Distribution:

CRMO (2), MS A150
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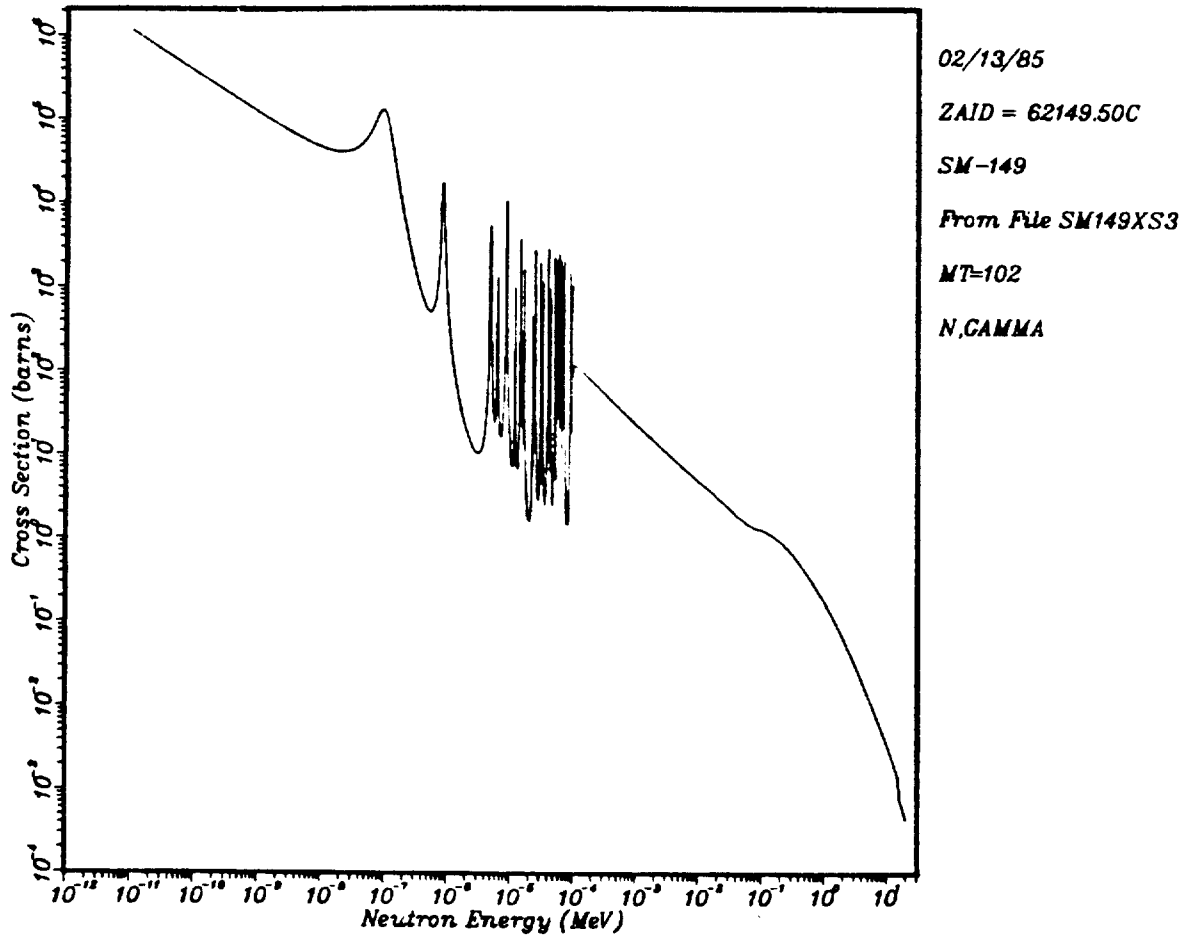
Cross Section (barns)
Neutron Energy (MeV)
02/13/85
ZAID = 62149.50C
SM-149
From File SM149XS3
MT=102
N,GAMMA

Fig. 1